Amendments to the Claims:

1. (Currently amended) ~~An antibacterial compound consisting of a~~ substantially uncharged antisense oligomer containing from 10 to 40 morpholino subunits, each of said subunits supporting a base-pairing moiety effective to bind by Watson-Crick base pairing to a respective nucleotide base,

wherein said base-pairing moieties includ~~ing~~ a targeting nucleic acid sequence at least 10 nucleotides in length which is effective to specifically hybridize to a target sequence ~~containing a~~ which spans the translational start codon for secA protein within the *E. coli* ~~a bacterial~~ nucleic acid sequence presented as SEQ ID NO: 2, ~~which encodes an *E. coli secA* protein, and thereby to inhibit expression of said target sequence;~~

and wherein adjacent subunits are joined by uncharged linkages selected from the group consisting of[[:]] uncharged phosphoramidate and phosphorodiamidate, or by charged linkages selected from the group consisting of charged phosphoramidate and phosphorodiamidate, ~~and~~ the ratio of uncharged linkages to charged linkages in the oligomer being ~~is~~ at least 4:1.

2-3. (Cancelled)

4. (Currently amended) The ~~compound~~ oligomer of claim 1, wherein each said uncharged linkage is a phosphorodiamidate linkage as represented by –P(=O)(NR_2)–O–, where R is hydrogen or methyl.

5. (Currently amended) The ~~compound~~ oligomer of claim 4, wherein each said linkage in said oligomer is an uncharged phosphorodiamidate linkage as represented by –P(=O)(NR_2)–O–, where R is hydrogen or methyl.

6. (Currently amended) The ~~compound~~ oligomer of claim 1, wherein the targeting nucleic acid sequence has a length of 10 to 20 bases.

7-12. (Cancelled)

13. (Currently amended) The ~~compound~~ oligomer of claim 1, wherein the targeting sequence has the sequence presented as SEQ ID NO: 47 (*E. coli secA*).

14-41. (Cancelled)

REMARKS

Reconsideration of the rejections set forth in the Office action mailed September 10, 2003 is requested. Claims 1, 4-6, and 13 are pending; the remaining claims have been cancelled.

I. Basis for Amendments

Claim 1 has been amended to replace "An antibacterial compound consisting of a substantially uncharged antisense oligomer" with simply "A substantially uncharged antisense oligomer". In view of the meaning of the transitional term "consisting of", the two expressions are equivalent.

The dependent claims are amended to recite "The oligomer" rather than "The compound", in view of the amendment to claim 1.

Claim 1 is further amended to replace the phrase "effective to hybridize" with "effective to specifically hybridize", as suggested by the Examiner. See e.g. page 7, lines 31,32 or page 8, line 9 of the specification.

The phrase "a target sequence containing a translational start codon within a bacterial nucleic acid sequence which encodes an *E. coli secA* protein" has been replaced with "a target sequence which spans the translational start codon for *secA* protein within the *E. coli* nucleic acid sequence presented as SEQ ID NO: 2". Support is found, for example, in the specification at page 24, lines 1-21, which describes a strategy for designing antisense oligonucleotides of the invention. Reference is made therein to the nucleic acid sequences given in Table 1, page 23. SEQ ID NO: 2 of this Table is an *E. coli* nucleotide sequence (Genbank Acc. No. X55034) which includes the coding sequence for secA protein (page 23, lines 5-6; second line of Table). See also page 25, lines 8-10 and 13-15, which describe an exemplary oligomer (SEQ ID NO: 47) designed according to this strategy.

No new matter is added by any of the amendments.

II. Allowable Subject Matter

The Office Action found the subject matter of claims 1, 4-6 and 13 to be free of the prior art.

III. Rejections under 35 U.S.C. §112, First Paragraph

Claims 1, 4-6 and 13 were rejected under 35 U.S.C. §112, first paragraph, as containing

subject matter which was not described in the specification in such a way as reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the Examiner stated that the genus of "antibacterial compounds", the genus of "*E. coli secA* proteins" and the genus of "antisense oligomers that effectively hybridize to a target sequence" were inadequately defined.

The applicant submits that a "genus of antibacterial compounds" is not pertinent, since the claims no longer include this term.

Claim 1 refers to *E. coli secA* protein in the context of "the translational start codon for *secA* protein within the *E. coli* nucleic acid sequence presented as SEQ ID NO: 2". The sequence of SEQ ID NO: 2 is unambiguously defined (see Table 1, as well as the sequence listing submitted with the application), as is the location of the translational start codon for *secA* protein within this sequence. For example, an exemplary sequence (SEQ ID NO: 47; see also page 5, lines 17-19) designed to target this start codon is described on page 25, lines 8-10 and 13-15 of the specification. The location of this exemplary sequence within SEQ ID NO: 2 (which corresponds to Genbank Acc. No. X55034; see Table 1, page 23) is provided in Table 2A (page 25).

In addition, the Genbank record itself, readily available to one skilled in the art via the NCBI web site, identifies the location of the coding sequence and start codon for *secA* protein.

Claim 1 also recites that the base-pairing moieties of the antisense oligomer include "a targeting nucleic acid sequence at least 10 nucleotides in length which is effective to specifically hybridize to a target sequence which spans the translational start codon" for *secA* protein within the *E. coli* nucleic acid sequence presented as SEQ ID NO: 2. At the time the application was filed, one skilled in the art could easily identify such a target sequence, for the reasons described above. In addition, a sequence which "specifically hybridizes" to a target sequence is defined, for example, at the paragraph bridging pages 7-8 of the specification. One of skill in the art could readily predict whether a given sequence would be expected to specifically hybridize to a target sequence, based on known principles, such as the discussion of duplex stability at pages 10-11 of the specification. If desired, such predictions could be experimentally tested by known methods, e.g. on the basis of Tm, as described further at page 11, lines 9-16 of the specification.

In view of the above, the applicant submits that the specification provides sufficient

written description of the claimed subject matter as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention.

IV. Rejections under 35 U.S.C. §112, Second Paragraph

Claims 1, 4-6 and 13 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 has been amended, as noted above, to replace the phrase "effective to hybridize" with "effective to specifically hybridize", as suggested by the Examiner. In view of the definition provided at page 7, lines 32-35 of the specification, the term would be clear to one skilled in the art.

Claim 5 has been amended to clarify that the claim refers to each intersubunit linkage in the oligomer; that is, in the embodiment of claim 5, all of the intersubunit linkages are uncharged.

In view of the foregoing, the applicants submit that the amended claims comply with the requirements of 35 U.S.C. §112, second paragraph.

V. Conclusion

In view of the foregoing, the applicant submits that the claims now pending are now in condition for allowance. A Notice of Allowance is, therefore, respectfully requested.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is encouraged to call the undersigned at (650) 838-4403.

Respectfully submitted,

Date: Jan 12, 2004

LeeAnn Gorthey
Registration No. 37,337

Correspondence Address:
PAYOR NUMBER 22918
PHONE: (650) 838-4403
Fax: (650) 838-4350